

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|   |  |  |
|---|--|--|
| Applicant's or agent's file reference<br><b>C09164</b>  | <b>FOR FURTHER ACTION</b><br>see Form PCT/ISA/220<br>as well as, where applicable, Item 5 below. |  |
| International application No.<br><b>PCT/AU2009/001144</b>   | International filing date ( <i>day/month/year</i> )<br><b>3 September 2009</b>                   | (Earliest) Priority Date ( <i>day/month/year</i> )<br><b>12 September 2008</b> |
| Applicant<br><b>RESMED LTD et al</b>  |  |  |
| This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.<br>This international search report consists of a total of <b>6</b> sheets.<br><input type="checkbox"/> It is also accompanied by a copy of each prior art document cited in this report.  |  |  |
| <p><b>1. Basis of the report</b></p> <p>a. With regard to the language, the international search was carried out on the basis of:</p> <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> The international application in the language in which it was filed.<br/> <input type="checkbox"/> A translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).         </div> <p>b. <input type="checkbox"/> This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.66b(a)).</p> <p>c. <input type="checkbox"/> With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.</p> <p><b>2.</b> <input type="checkbox"/> Certain claims were found unsearchable (See Box No. II).</p> <p><b>3.</b> <input checked="" type="checkbox"/> Unity of invention is lacking (See Box No. III).</p> <p><b>4. With regard to the title,</b></p> <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> the text is approved as submitted by the applicant.<br/> <input type="checkbox"/> the text has been established by this Authority to read as follows:         </div> <p><b>5. With regard to the abstract,</b></p> <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> the text is approved as submitted by the applicant.<br/> <input type="checkbox"/> the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.         </div> <p><b>6. With regard to the drawings,</b></p> <p>a. the figure of the drawings to be published with the abstract is Figure No. <b>1</b></p> <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> as suggested by the applicant.<br/> <input type="checkbox"/> as selected by this Authority, because the applicant failed to suggest a figure.<br/> <input type="checkbox"/> as selected by this Authority, because this figure better characterizes the invention.         </div> <p>b. <input type="checkbox"/> none of the figures is to be published with the abstract.</p> |  |  |

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

(Please see supplemental box I)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention covered by claims Nos.: 5 - 13

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2009/001144

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

A61M 16/06 (2006.01)

A62B 9/04 (2006.01)

A62B 7/00 (2006.01)

A62B 9/06 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 EPODOC, WPI: IPC, ECLA A61M 16/-, A62B 7/-, 9/- and 18/- & keywords (Mask, patient interface, foam, cushion, seal, conforming, face, taper, triangle, cross - section) and like terms

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages* | Relevant to claim No. |
|-----------|---|-----------------------|
| X         | US 2006/0237018 A1 (McAULEY et al.) 26 October 2006<br>Abstract; FIGURE 4           | 5 - 9 and 13          |
| A         | WO 2007/068044 A1 (RESMED LTD) 21 June 2007<br>See entire document                  |                       |
| A         | US 2001/0020474 A1 (HECKER et al.) 13 September 2001<br>See entire document         |                       |
| A         | GB 2376896 A (CHANG) 31 December 2002<br>See entire document                        |                       |

☐ Further documents are listed in the continuation of Box C☒ See patent family annex

|          |   |     |  |
|----------|---|-----|--|
| *<br>"A" | Special categories of cited documents:<br>document defining the general state of the art which is not considered to be of particular relevance                      | "T" | later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  |
| "B"      | earlier application or patent but published on or after the international filing date   | "X" | document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone   |
| "L"      | document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "Y" | document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "O"      | document referring to an oral disclosure, use, exhibition or other means  | "&" | document member of the same patent family  |
| "P"      | document published prior to the international filing date but later than the priority date claimed  |     |  |

Date of the actual completion of the international search  
15 December 2009

Date of mailing of the international search report

18 DEC 2009

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**Supplemental Box I**

(To be used when the space in any of Boxes I to IV is not sufficient)

**Continuation of Box No: III**

This International Searching Authority has found that there are fifteen different inventions as follows:

- Claims 1 – 4 are directed to a facial mask. It is considered that a frame, a substructure and a cushion, the cushion is fanned at least in part from foam, the substructure is formed from a material that is more rigid than the foam portion of the cushion, the surface is constructed and arranged to lie at a first angle in a first region of the cushion and to lie at a second angle in a second region of the cushion wherein the first and second angles are different comprises a first distinguishing feature.
- Claims 5 – 13 are directed towards a facial mask. It is considered that a foam cushion that forms a face contacting portion to effect a seal, a cross-section of the cushion tapers from a wider cross-section to a narrower cross-section closer to the face and the tapered portion defines an inside surface adjacent an interior of the cushion and an outside surface comprises a second distinguishing feature.
- Claims 14, 16, 17, 21 and 23 – 26 are directed towards a cushioning component. It is considered that inner side defined by the side facing the centre of the mask, an outer side defined by a side facing away from the centre of the mask; and a base side facing the frame or clip portion; wherein the length of outer side is greater than the inner side comprises a third distinguishing feature.
- Claims 15, 18 – 20 are directed towards an interfacing structure. It is considered that a clip portion joined to a cushioning component, wherein an upper surface of the clip portion is joined to a base surface of the cushioning component; and wherein at least a portion of the upper surface is angled to provide a moment force on cushioning component, when force is applied into the cushioning component comprises a fourth distinguishing feature.
- Claim 22 is directed towards a nasal mask. It is considered that a frame removably connected to an interfacing structure, wherein the interfacing structure includes a cushioning component constructed of foam material, and wherein the height of the interfacing structure is reduced in relation to region that is adapted to contact the upper lip region of a patient's face comprises a fifth distinguishing feature.
- Claims 27 – 31 are directed towards a foam cushion. It is considered that at least a portion of the foam cushion is adapted to rotate towards/away from the centre of the mask when pressure is applied into the cushion by the patient's face and wherein at least a portion of the outer side wall of said cushion is adapted to form a seal against the face of a patient comprises a sixth distinguishing feature.
- Claims 32 and 33 are directed towards a foam cushion. It is considered that at least one cross section of the cushion includes at least outer and inner side wall, wherein the outer side wall is longer than the inner side wall comprises a seventh distinguishing feature.
- Claims 34 and 35 are directed towards a foam cushion. It is considered that a first surface for contacting patient's face and a second surface opposed to the first surface, wherein the second surface is joined to a clip portion and wherein the length of the cross section of second surface is greater than the length of the cross section of the clip portion comprises an eighth distinguishing feature.
- Claim 36 is directed towards a flexible cushion. It is considered that a foam patient interface joined to a compressed foam clip portion comprises a ninth distinguishing feature.
- Claim 37 is directed towards a foam cushion. It is considered that one weakened region positioned on either side of the patient's nasal bridge to prevent pinching or buckling of foam comprises a tenth distinguishing feature.
- Claims 38 and 39 are directed towards a foam cushion. It is considered that the first layer is less dense than second layer comprises an eleventh distinguishing feature.

[Continued in Supplemental Box II]

**Supplemental Box II**

(To be used when the space in any of Boxes I to VIII is not sufficient)

**Continuation of Box No: Supplemental Box I**

- Claim 40 is directed towards a foam cushion. It is considered that first layer is softer than second layer comprises a twelfth distinguishing feature.
  - Claims 41 – 45 are directed towards a cushioning component. It is considered that a patient contacting surface; that is adapted to contact a patient, in use, has a rounded cross sectional profile and a base surface opposed to the patient contacting surface comprises a thirteenth distinguishing feature.
  - Claims 46 – 51 are directed towards a mask comprising a removable interfacing structure. It is considered that a patient contacting surface that is adapted to contact a patient, in use, has a rounded cross sectional profile and a base surface opposed to the patient contacting surface is joined to a clip portion, and wherein the clip portion is adapted to be removably joined to a frame of said mask comprises fourteenth distinguishing feature.
  - Claims 52 and 53 are directed towards a mask. It is considered that a frame and an interfacing structure, wherein the interfacing structure comprises a clip portion joined to cushioning component, and wherein the frame is more rigid than the clip portion and the clip portion is more rigid than the cushioning portion comprises a fifteenth distinguishing feature.
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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent Document Cited in<br>Search Report   |            |               | Patent Family Member |               |  |
|---|------------|---------------|----------------------|---------------|--|
| US  | 2006237018 | AT 500484     | AU 15432/02          | AU 51876/01   |  |
|   |            | AU 51877/01   | AU 67947/01          | AU 2004268479 |  |
|   |            | BR 0212453    | CA 2350351           | CA 2350356    |  |
|   |            | CA 2370995    | CA 2407118           | CA 2413938    |  |
|   |            | CA 2457277    | CN 1553820           | EP 1163923    |  |
|   |            | EP 1163924    | EP 1289590           | EP 1302212    |  |
|   |            | EP 1306098    | EP 1425060           | EP 1663366    |  |
|   |            | EP 1905475    | ES 2319832           | JP 2002028240 |  |
|   |            | JP 2002095751 | NZ 508219            | NZ 514972     |  |
|   |            | US 6615834    | US 6662803           | US 6701926    |  |
|   |            | US 6789541    | US 6832610           | US 6951218    |  |
|   |            | US 7017576    | US 2002005201        | US 2002014241 |  |
|   |            | US 2003000533 | US 2003062048        | US 2003066531 |  |
|   |            | US 2003089373 | US 2003111080        | US 2003154978 |  |
|   |            | US 2003196659 | US 2003217746        | US 2004035428 |  |
|   |            | US 2004065327 | US 2004244800        | US 2004244804 |  |
|   |            | US 2004255950 | US 2007062536        | US 2008047557 |  |
|   |            | US 2009223520 | WO 0195965           | WO 03022341   |  |
|   |            | WO 03030978   | WO 2005021075        |               |  |
| WO  | 2007068044 | NONE          |                      |               |  |
| US  | 2001020474 | DE 10002571   | DE 20001040U         | EP 1118346    |  |
| GB  | 2376896    | NONE          |                      |               |  |
| Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001. |            |               |                      |               |  |
| END OF ANNEX  |            |               |                      |               |  |